

AMPHIBIA: CAUDATA: PROTEIDAE

NECTURUS ALABAMENSIS

Catalogue of American Amphibians and Reptiles.

Bailey, M.A. and P.E. Moler. 2003. *Necturus alabamensis*.

Necturus alabamensis Viosca

Black Warrior Waterdog

Necturus alabamensis Viosca 1937:121. Type locality, "Black Warrior River near Tuscaloosa, Alabama." Holotype, National Museum of Natural History (USNM) 102676, a gravid female, date of collection and collector unknown (not examined by authors).

Necturus beyeri; Bishop 1943:28 (part).

Necturus beyeri alabamensis; Hecht 1958:4, 17 (part).

• **CONTENT.** No subspecies are recognized.

• **DEFINITION AND DIAGNOSIS.** *Necturus alabamensis* is a large, aquatic salamander with a maximum recorded TL of 248 mm (Bart et al. 1997). Post-hatchlings (28–48 mm TL) are dorsally dark brown or black with light dorsolateral stripes beginning at the nares, extending posteriorly through the eye, and terminating on the dorsal fin of the tail. The striped pattern of the larvae closely resembles that of *N. maculosus* (Ashton and Peavy 1986, Bart et al. 1997). Subadults (40–100 mm TL) are not conspicuously marked, with little if any spotting, but a dark stripe extends from the nostril through the eye to the gills. Adults are usually brown, may be spotted or unspotted, and retain the dark eye stripe. *Necturus* sp. cf. *beyeri* occurs with *N. alabamensis* near the Fall Line, but the larvae of the former are unstriped (Guttman et al. 1990). The largest individual recorded, a female, was melanistic, with no spotting or brown pigment (Bart et al. 1997). The ventral surface of all age classes is white.



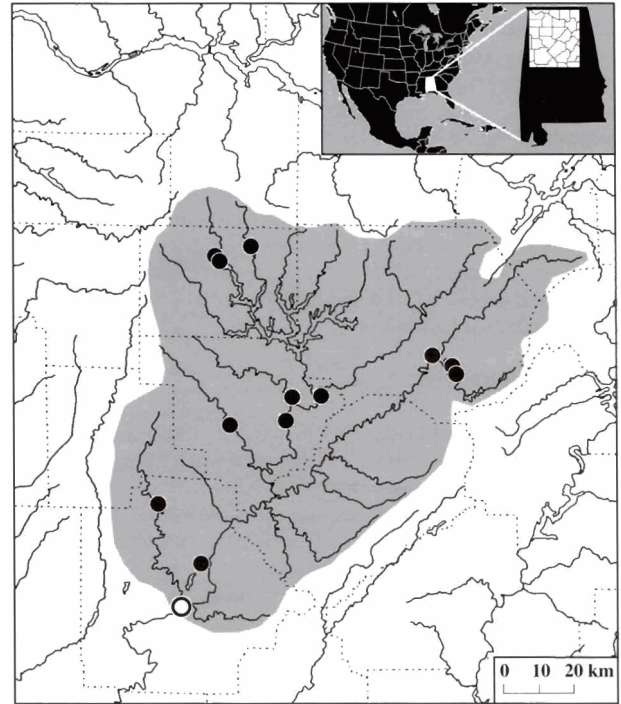
FIGURE 1. Adult *Necturus alabamensis* from Brushy Creek, Winston County, Alabama (photograph by G. Sievert).



FIGURE 2. Subadult *Necturus alabamensis* from Sipsey Fork, Winston County, Alabama (photograph by B. Mansell).



FIGURE 3. Distinctly striped larval *Necturus alabamensis* from Sipsey Fork, Winston County, Alabama; note that this image is at approximately twice the scale of Figure 2 (photograph by B. Mansell).



MAP. Distribution of *Necturus alabamensis* in the upper (above the Fall Line) Black Warrior Basin: the circle marks the type locality and dots mark other known records.

• **DESCRIPTIONS.** Bart et al. (1997) provided the most detailed description. Briefer descriptions are in Viosca (1937), Brode (1969), Mount (1975), and Ashton and Peavy (1986).

• **ILLUSTRATIONS.** Viosca (1937) and Bart et al. (1997) provided black and white photographs of adults. Ashton and Peavy (1986) provided a color photograph of a larva, and a drawing of a larva appears in Bart et al. (1997). Powell et al. (1998) included a line drawing of the venter. A Georgia specimen (WTN No. US-2453) pictured in Neill (1963) and Florida specimens illustrated in Figure 262 and Plate 146 in Petranka (1998) are *N. cf. beyeri* rather than *N. alabamensis* (see **Comments**).

• **DISTRIBUTION.** *Necturus alabamensis* occurs in permanent streams above the Fall Line in the Black Warrior River Basin of Alabama. It is known from a total of nine stream seg-



FIGURE 4. Adult *Necturus alabamensis* (Tulane University, TU 23139) from Lost Creek, Walker County, Alabama (photograph by H.L. Bart).

ments in four counties: Sipsey Fork and Brushy Creek in Winston County; Locust Fork and Blackburn Fork in Blount County; Mulberry Fork, Blackwater Creek, and Lost Creek in Walker County; and Yellow Creek and North River in Tuscaloosa County (Ashton and Peavy 1986, Bart et al. 1997).

Although geographic distribution has not been clearly delineated by numerous collections, the species' range is thought to essentially parallel that of the Flattened Musk Turtle, *Sternotherus depressus* (Ashton and Peavy 1986, Bart et al. 1997). Additional comments on distribution of the "West Sipsey Fork waterdog" (as it was once known) can be found in Brode (1969), Mount (1975), Bart et al. (1997), and Durflinger (2001). Neill (1963) commented on the distribution of *N. alabamensis*, but considered other east Gulf drainage *Necturus* populations to be conspecific (see **Comments**).

• **FOSSIL RECORD.** None.

• **PERTINENT LITERATURE.** Viosca (1937) described *N. alabamensis* and *N. beyeri*, which he acknowledged were sympatric at the *N. alabamensis* type locality. Bishop (1943) and Schmidt (1953) did not recognize *N. alabamensis*, apparently synonymizing it with *N. beyeri*. Hecht (1958) and Conant (1958) treated *N. alabamensis* as a subspecies of *N. beyeri*. Neill (1963) discussed habitat and distribution of *N. alabamensis* and, while arguing for the validity of the species, considered it conspecific with Coastal Plain forms. Brode (1969) synonymized *N. beyeri* and other Gulf Coastal Plain waterdogs with *N. punctatus*, but treated the Sipsey Fork form as an undescribed subspecies of *N. maculosus*. Conant (1975) and Conant and Collins (1991) treated *N. alabamensis* as a full species distributed throughout the Mobile Bay and nearby lesser Gulf drainages. Mount (1975) considered *N. alabamensis* a problematic form, and tentatively treated all Alabama populations south of the Tennessee River as *N. beyeri*. Ashton and Peavy (1986) noted the striped larval pattern of waterdogs in the upper Black Warrior River system and regarded them as an undescribed species. Maxson et al. (1988) could not distinguish a sample from Sipsey Fork from *N. maculosus* on the basis of immunological data. Guttman et al. (1990) concluded that further assessment of the taxonomy of upland Black Warrior River populations was warranted given the striped larval form, slight electrophoretic differentiation from other *Necturus* in the Mobile Bay drainage, other evidence of endemism in the upper Black Warrior system (e.g., *Sternotherus depressus*), and Neill's (1963) assertion that two *Necturus* forms were syntopic near the southern limit of the Appalachian Plateau. Bart et al. (1997) provided evidence of two distinct waterdogs in the Mobile Bay drainage, and showed that Viosca's (1937) *N. alabamensis* is restricted to the portion of the Black Warrior River above the Fall Line. Petranka (1998) tentatively assigned the striped form of the upper Black Warrior River system to other *Necturus* in the Mobile Bay drainage, which he treated as *N. alabamensis*, but acknowledged that non-striped Coastal Plain populations differ from the type specimen and might eventually be assigned a new name. Durflinger (2001) reported on distribution, habitat use, population ecology, and conservation needs.

• **ETYMOLOGY.** The species is named for the state of Alabama (Choctaw for "clearers of the thicket").

• **COMMENTS.** Some references refer to waterdogs from the range of *N. alabamensis* by different names, but only those that definitely identify the species as currently defined are included.

Most literature references for *N. alabamensis* encompass more than the currently recognized (Bart et al. 1997) taxon. Following Hecht's (1958) and Conant's (1958) treatment of *N. alabamensis* as a lowland subspecies of *N. beyeri*, the epithet *alaba-*

ensis became misapplied to Coastal Plain waterdog populations from eastern Louisiana to southern Georgia. Herpetologists were so unfamiliar with this secretive form that "true" *N. alabamensis* specimens collected in the 1960s from the upper Black Warrior system were treated as an undescribed taxon (Brode 1969). Bart et al. (1997) clarified the taxonomic confusion and recommended treating the more widespread form(s) as *N. sp. cf. beyeri* until further studies are completed on the waterdogs of the Gulf drainages east of the Mississippi River.

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